Challenging in Dengue Vaccine Development

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Abstract
Dengue is one of the most troublesome human viral diseases globally. Currently, there are no effective measures to treat or prevent the disease. Supportive care with vigilant monitor of the disease is the current clinical practice. One-quarter of the affected people succumb to symptomatic conditions, while three-quarter of the people are asymptomatic without overt clinical signs. Traditionally, mosquito bite is thought to be the main route of transmission for dengue. But the dengue cases through unconventional transmitted methods are escalating, such as blood transfusion, bone marrow and stem cell transplantations, organ transplantation, and vertical mother-to-infant transmission. Despite intensive efforts have been made to understand the pathogenic cause of dengue hemorrhagic fever for more than 4 decades, and yet the actual entity responsible for the cause remains an enigma, which could be directly link to the ineffective of the WHO approved dengue vaccine, Dengvaxia®. In this presentation, issues that could be helpful to sharpen and improve the efficacy of dengue vaccine will be discussed. The discussion will center on immunity in dengue subjects, why subjects who are previously exposed to dengue virus still vulnerable to re-infection, and does dengue virus establish persistent and/or latent infections in human beings.

About Our Speaker
Oscar’s research is to integrate the epidemiological data from public health into understanding the pathogenesis of viral infection for vaccine development. The primary focus is on the role of stem and progenitor cells in development of mosquito-borne viral diseases and the fate of these cells after encountering the virus. Dissecting the dynamic interactions between viruses and stem and progenitor cells or host immune factors by molecular approach as well as multicolor flow cytometry is the methodological techniques to achieve the goal.